The Cause of the Sun Spots and their Periodicity.

Mr. W. T. Lynn suggests, in a letter to the August *Observatory*, that "the most probable cause of the periodicity of the solar spots" is that they are produced by a ring of meteors which revolve around the Sun and pass very near his body when in perihelion. If the period of revolution of the ring were assumed to be 11.1 years, the aphelion of the orbit would be slightly outside of *Saturn s* orbit. It would have to be assumed that, as in other well-known streams, the meteors were especially numerous in a particular part of the stream, and that a maximum of Sun spots is produced when this dense part is passing perihelion.

Mr. Lynn's suggestions form an important modification of an old theory that the spots are due to the falling of meteoric matter upon the Sun. However, if it be held that the spots are caused *directly* by the fall of meteors, there still remains the enormous difficulty of explaining the distribution of the spots in two well-defined spot zones. Further, the meteors would approach always from the same direction in space, and the Sun spots should *originate* almost wholly on one hemisphere (with reference to space) of the Sun. W. W. C.

The Next Total Eclipse of the Sun.

Astronomers are already beginning to plan for the next observable total solar eclipse, which occurs 1896, August 8. The line of totality passes through Norway, the island of Nova Zembla, central Siberia, northeastern China, and the island of Yezo in Japan. The eclipse at Yezo occurs at 3 P. M., and the duration of totality is about $2^m\,40^s$. European parties will probably establish their stations, for the most part, in northeastern Norway and on Nova Zembla. American observers will undoubtedly go to Yezo, if the meteorological conditions are not too unpromising. When the results obtained at the April, 1893, eclipse have been published and discussed, it will be none too soon to prepare for the eclipse of 1896. Just what will be the most important problems left over from the recent eclipse cannot now be stated, but spectroscopic observations will undoubtedly occupy the most important places on the observing programmes. W. W. C.

Jupiter's Satellites.

The August number of *l'Astronomie*, in commenting upon certain observations of *Jupiter's* satellites made by the Arequipa

observers, asks whether the great LICK Observatory telescope could not for a time be devoted to this curious subject.

Results of satellite observations made here by various observers have been published at various times, and from some personal observations of the conditions prevailing at Arequipa I have little hesitation in saying that for the same observer the results given by the 13-inch telescope at Arequipa can not equal those given by the 36-inch on Mt. Hamilton; so that if it should finally turn out that certain marked peculiarities of the satellites had been observed at Arequipa which had not previously been observed here, this must be attributed to a superior diligence of the South American observers. J. M. S.

1893, September 1.

THE CHANGE OF SENSITIVENESS IN DRY PLATES.

We quote some exceedingly interesting and useful remarks on the subject of dry plates in astronomical photography from a paper* by Professor MAX WOLF of Heidelberg University:

"* * It is not a pleasant experience to give an eight or nine hours' exposure to what is believed to be a highly sensitive plate, and then to find on development that the whole work has been thrown away, because the plate was really quite an insensitive one. The photographer who has had this experience repeated several times (as I have), very soon learns to become cautious. The only reliable test of sensitiveness, however, as I may here remark, is comparison by actual exposure to stars, the ordinary sensitometer tests being much too uncertain.

"Special caution is necessary in dealing with fresh plates. In the early part of my work I always noticed that new plates received from the makers were uniformly less sensitive than the previous ones, and that it was necessary to expose them a much longer time, so that it almost seemed as if the manufacture of dry plates was retrograding. * * The peculiarity is so strongly marked that during the last winter I was hardly able to obtain the same objects on a new lot of LUMIÈRE plates that I had previously obtained with the last plates of the same make, even with a three-fold greater exposure. * *

"I had, indeed, known earlier than this that plates changed

* The English translation in *Astronomy and Astro-Physics* for August, from the original in EDER'S *Jahrbuch für Photographie und Reproductions-technik.*